

# PERCEPTION TO INDUSTRIAL REVOLUTION 4.0 IN UNIVERSITI UTARA MALAYSIA (UUM) AMONG OPERATION MANAGEMENT STUDENTS

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**Abstract:** The Industrial Revolution (IR) 4.0 is now in the world's attention. Initially, IR 4.0 was placed inside manufacturing industry. As time goes by, the implementation of IR 4.0 has been widespread among the various types of industries including education. Therefore, it is important for students to acquire this knowledge as they wish will be severely affected from today onwards. The purpose of this paper is to identify the student perception among Operation Management students toward IR 4.0, and their focus is on students at Universiti Utara Malaysia (UUM). The questionnaires are categorized into of perception and respond/react from operation management student and the data collected were analysed using the Statistical Packages for Social Science (SPSS). This questionnaire form will be distributed to 200 Operation Management students for the results of this study. The findings show that most of students are aware and have heard about IR 4.0 but they are less knowledgeable about that. The majority of them have neutral or incapable of forming concrete perceptions on various aspects of IR 4.0 and this evidenced by the consistent number of mean results for all perceptual variables tested in the questionnaire. In terms of behaviour towards IR 4.0, the results indicate that most students are less exposed to IR 4.0 but they are keen to know more about it, especially during their studies. Finally, suggestions for improving awareness and change of perception about IR 4.0 among students are made.

**Keyword:** Operation management, industrial revolution 4.0, perception, student

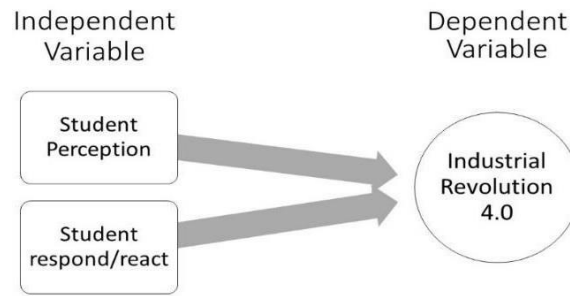
## 1. INTRODUCTION

Industry revolution 4.0 is the fourth industrial revolution will take what was started in the third with the adoption of computers and automation and enhance it with smart and autonomous systems fueled by data and machine learning. Future education 4.0 must be able to produce highly creative graduates with the ability to think critically irrespective of disciplines (Abdul Haseeb, 2018). This research is about to know perception operation management students toward IR 4.0 and to know how they respond to IR 4.0. After that the technology use showed a significant positive association with students' learning habits, these technologies uses had no significant influence on their academic outcomes (Lei, 2010).

IoT has been gaining attraction in industry such as logistics, manufacturing, retailing, and pharmaceuticals. With the advances in wireless communication, smartphone, and sensor network technologies, more and more networked things or smart objects are being involved in IoT.. In order to provide high-quality services to end users, IoT's technical standards need to be designed to define the specification for information exchange, processing, and communications between things. In addition, IR 4.0 will bring a huge impact to the worldwide as it affects the way human live, work, play, socialize and even on how human should behave (Ahmad, 2016). The purpose of this research is to identify the student perception toward IR 4.0.

## 2. METHODOLOGY

Figure 1 shows the research framework of this study.



**Figure 1**  
Research framework

In this research the survey has been distributed to student that enrolled in the Operation Management (POM) Program. The population of Operation Management students is 572 student. The survey consists of three section. Section A requires respondents to fill out their demographic detail such as gender, age, education level and current semester. Section B contains 7 items assessing the respondent's perception toward IR 4.0. These item were in the form of Likert Scale that range from 1 (strongly disagree) to 5 (strongly agree). Lastly, section C assess the respondent respond/react toward IR 4.0. the purpose is to know whether respondents have involved or engaged in any activities that bring more awareness and understanding in IR 4.0.

## 3. RESULTS AND DISCUSSION

Table 1 show that the total number of respondents is about 180 students in the Universiti Utara Malaysia of these, 108 (60.00%) were female students while the remaining 72 were male (40.00%). The total number of respondents is about 180 students in the Universiti Utara Malaysia of these, 108 (60.00%) were female students while the remaining 72 were male (40.00%). Respondents by age total 121 (67.22%) students aged 22-24 51 (28.33%) students 19-21 while the rest were only 8 (4.44%) students in the 25 above age group. Respondents by education 136 (75.56%) students from the STPM, 31 (17.22%) students from the diploma matriculation only 10 (5.56%) while the rest were only 3 (1.67%) students from the STAM. Lastly, respondent by semester 59 (32.8%) for the student in semester 7, 37 (20.6%) for the students in semester 3, 32 (17.8%) from semester 1, 22 (12.2%) from semester 5, 14 (7.8%) from semester 4, 13 (7.2%) from semester 6 and lastly 3 (1.7) from semester 2.

**Table 1**  
Demographic profile of the respondent

Item	Frequency	%
Gender		
Male	72	40.0
Female	108	60.0
Age		
19-21 years	51	28.3
22-24 years	121	67.2
25 above years	8	4.4

Semester		
1	32	17.8
2	3	1.7
3	37	20.6
4	14	7.8
5	22	12.2
6	13	7.2
7	59	32.8
Education Level		
STPM	136	75.6
Diploma	31	17.2
Matriculation	10	5.6
Other	3	1.7

Based on Table 2, majority operation management students agree that the IR 4.0 will improve efficiency of processes in an organization (mean=4.41) because it normally will simplify processes in the organization. In addition, the student also agrees that the IR 4.0 will involve significant cost to an organization (mean=4.36). Lastly, respondent unable to give a firm opinion about the IR 4.0 will result in mass unemployment gets the lowest mean= 3.79. From this finding the mean for the perception is 4.1762 with is majority student in operation management is slightly to strongly agree with the all question about the perception toward IR 4.0.

**Table 2**  
Operation Management student's perception toward IR 4.0

Student's perception	Mean	Std. Deviation
Malaysia is ready for IR 4.0.	3.94	.738
IR 4.0 will result in mass unemployment.	3.79	.837
Data security issue is the biggest concern in IR 4.0.	4.16	.771
IR 4.0 will improve efficiency of processes in an organization.	4.41	.691
IR 4.0 will bring greater benefits to the society.	4.23	.761
IR 4.0 is the next evolution of automating processes, making them smarter and better.	4.34	.694
IR 4.0 will involve significant cost to an organization.	4.36	.737

Table 3 shows how the student reacts towards to the IR 4.0.

**Table 3**  
Operation Management students respond/react toward IR 4.0

Students respond/react toward IR 4.0	Yes	No
Have you discussed about IR 4.0 with peer of friend?	53.9%	46.1%
Have you learned about IR in class?	72.2%	27.9%
Have you attended any seminars or talks relating to IR 4.0?	66.1%	33.9%
Would you agree that the students lack of exposure on the IR 4.0?	81.1%	18.9%
Do you think learning IR 4.0 is important to students?	98.9%	1.1%
Do you think university should follow industry in implementing IR 4.0?	97.8%	2.2%
Do you intend to know more about IR 4.0?	99.4%	0.6%

The majority of the students say yes (99.4%) which are they wanting to know more about IR 4.0 because as a student from operational management they must know about IR 4.0 more in

their study for their knowledge. The student also agrees that the learning IR 4.0 is important to the student (98.9%) and while the university should follow industry in implementing IR 4.0 (97.8%). In addition, most of students did not discuss about IR 4.0 with their peer or friend (46.1%), they did not attend any seminars or talks relating to IR 4.0 (33.9%) and they did not learn about IR 4.0 in class.

#### **4. CONCLUSION**

Finding show that the operations management students are generally aware and have knowledge about IR 4.0 though many of them still were unable to form concrete opinion. In this research there are some student in semester 1 until 3 has less knowledge about the IR 4.0. The study also shows a positive attitude toward IR 4.0 where they are very interested to know more about IR 4.0. The finding shows that university which is particularly educators must also empower themselves to prepare more about the IR 4.0 to the students for their future. This is because IR 4.0 is a most important thing in this industry and student can learn more and apply when they are at work. The university has to be prepared to adapt and change their curriculum and delivery so that graduates are able to get jobs which are yet to emerge. Educators should be more focused on the outcomes and performance and at the same time to pursue technologies and innovations that meet the student's needs.

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